Trend Study 17-36-97

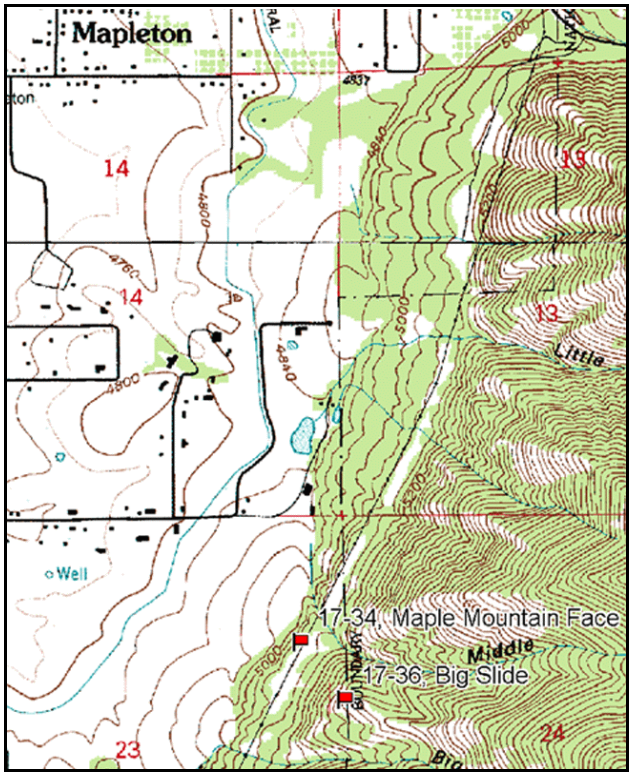
Study site name: Big Slide . Vegetation type: Big Sagebrush-Grass .

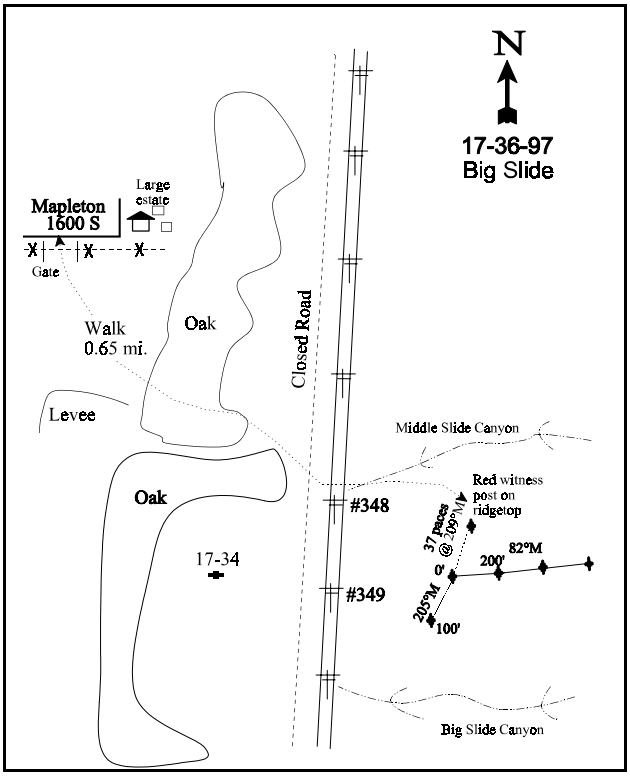
Compass bearing: frequency baseline 205 degrees magnetic (line 2-4 @ 82°M).

Frequency belt placement: line 1 (11 & 95 ft), line 2 (59 ft), line 3 (71 ft), line 4 (34 ft).

LOCATION DESCRIPTION

Drive up 1600 South in Mapleton to the end of road. Park and hike east for 0.65 miles to site. Follow the road south along the foothills to study site #17–34. On the slope above the power lines there is a small sagebrush opening north of the mouth of Big Slide Canyon. Follow game trails up the slope through the oakbrush to the study site. There is a tall red fence post on the top edge of the smallbench, from it the 0-foot baseline stake is 37 paces south (209 degrees). It is marked with browse tag #9086.





Map Name: Spanish Fork Peak

Diagrammatic Sketch

Township 8S , Range 3E , Section 24

GPS: NAD 27, UTM 12S 4439870 N 452357 E

DISCUSSION

Big Slide - Trend Study No. 17-36

***SUSPENDED - This site was suspended in 2002.

The Big Slide trend study is located on the slope above the Maple Mountain Face study which was established in 1989. The small open bench has a slope of 35% and an aspect to the southwest. The elevation is 5,400 feet. The slopes and drainages are dominated by clumps of oak with small openings of grass and sagebrush on the more level areas. In early September 1989, a wildfire higher up in Middle Slide Canyon burned both slopes and some timber. It was seeded by helicopter on October 15. In 1994, the site burned as part of the Big Slide Canyon burn. Parts of the mountain were seeded in the fall following the fire. Looking at the herbaceous composition of this area, some of the seed became established, although not in abundant numbers. There is currently no livestock grazing on this Forest Service administered site. Although there is very little sign of wildlife on the site, many pellet groups were encountered while hiking up the steep slope to the site. A small fawn was bedded down in some Gambel oakbrush and was flushed out while hiking up the trail.

The soil is moderately shallow and compacted. Near the top of the slope, rocks are a significant source of ground cover. There is no apparent erosion due to the grass and forb cover. Soil textural analysis indicates a clay loam with a neutral pH (6.7). The effective rooting depth is almost 14 inches with an average temperature of 55.8° F measured about 16 inches in depth.

Mountain big sagebrush was sampled in 1989, prior to the 1994 fire at a density of 699 plants/acre. Density declined in 1997 to only 20 plants/acre. Only one young mountain big sagebrush plant was sampled. Broom snakeweed, which was not previously encountered, had a density of 160 plants/acre in 1997. Apparently, some curlleaf mountain mahogany bare-root stock were planted along the lower slope of the study site. Density for curlleaf mountain mahogany was estimated at 160 plants/acre in 1997. Gambel oakbrush was burned and is now resprouting. Some of the taller plants, over 12 feet, were not completely burned. Most plants were classified as young with some seedling and mature. Density was estimated by counting individual stems. Utilization was light at this time.

Most of the ground cover comes from bulbous bluegrass, a low value perennial. It provided 43% of the total vegetative cover in 1997. Not all plants were producing seed heads during the 1997 reading, with most remaining dormant and low to the ground. Cheatgrass occurs in small patches scattered throughout the area providing 17% of the total vegetative cover in 1997. Other grasses include Sandberg bluegrass, orchard grass, and purple threeawn.

Forbs include many weedy species that would be expected after a fire. These include storksbill, autumn willoweed, hairy goldaster, Western ragweed, and wavyleaf thistle. Some seeded species have become established, these are mostly alfalfa and small burnet.

1989 APPARENT TREND ASSESSMENT

Erosion is minimal and soil condition appears stable. As on most other sites along the southern portion of the Wasatch Front, sagebrush appears to be in a state of decline. There is a high incidence of decadence and lack of recruitment. The herbaceous understory is totally dominated by the low value perennial, bulbous bluegrass.

1997 TREND ASSESSMENT

Soil trend is slightly upward. There is currently less bare soil, rock, and litter cover than estimated in 1989. Litter cover has remained nearly unchanged. Vegetative cover is abundant and there is no erosion apparent at this time. Browse trend is down. Mountain big sagebrush density has plummeted to only 20 plants/acre. The 1994 fire burned all mature plants leaving only one young plant being sampled in 1997. Gambel oakbrush is resprouting with an estimated 1,200 stems/acre. Broom snakeweed has become established and should be closely monitored as it has the propensity to increase its density quickly on sites like this. The herbaceous understory is stable, although a better composition is desired. Some seeded species have become established, but the winter annuals will provide intense competition and will likely exclude some species from the site in the future.

TREND ASSESSMENT
soil - slightly up (4)
browse - down (1)
herbaceous understory - stable, but poor composition (3)

HERBACEOUS TRENDS --
Herd unit 17 , Study no: 36

Type	Species	Nested Frequency '89	Nested Frequency '97	Quadrat Frequency '89	Quadrat Frequency '97	Average Cover % '97
G	Agropyron spicatum	7	-	2	-	-
G	Aristida purpurea	21	14	9	6	1.43
G	Bromus tectorum (a)	-	314	-	92	12.20
G	Dactylis glomerata	a-	b15	-	9	.33
G	Poa bulbosa	b383	a346	99	94	31.67
G	Poa pratensis	15	-	6	-	-
G	Poa secunda	a-	b19	-	8	.22
G	Sporobolus cryptandrus	6	-	2	-	-
Total for Annual Grasses		0	314	0	92	12.20
Total for Perennial Grasses		432	394	118	117	33.65
Total for Grasses		432	708	118	209	45.86
F	Ambrosia psilostachya	a13	b47	4	22	1.11
F	Artemisia ludoviciana	40	42	12	17	1.39
F	Asclepias spp.	-	6	-	2	.18
F	Balsamorhiza sagittata	-	2	-	1	.38
F	Calochortus nuttallii	-	1	-	1	.00
F	Cirsium undulatum	a4	b45	2	19	2.47
F	Crepis acuminata	-	2	-	1	.15
F	Cruciferae	-	1	-	1	.00
F	Epilobium brachycarpum (a)	-	83	-	33	.96
F	Erodium cicutarium (a)	-	114	-	40	4.78
F	Erigeron divergens	a-	b31	-	15	.81
F	Eriogonum racemosum	2	1	2	1	.15
F	Helianthus annuus (a)	57	-	24	-	-

Type	Species	Nested Frequency '89	Nested Frequency '97	Quadrat Frequency '89	Quadrat Frequency '97	Average Cover % '97
F	Heterotheca villosa	a-	b68	-	33	4.72
F	Lactuca serriola	24	39	11	17	1.23
F	Linum lewisii	a-	b8	-	4	.19
F	Lithospermum spp.	39	-	17	-	-
F	Lomatium spp.	a-	b8	-	5	.07
F	Medicago sativa	a-	b14	-	6	.95
F	Oenothera spp.	-	2	-	1	.03
F	Phlox longifolia	-	3	-	1	.03
F	Polygonum douglasii (a)	-	5	-	2	.01
F	Sanguisorba minor	a-	b14	-	7	.29
F	Tragopogon dubius	a36	b135	21	58	2.88
F	Trifolium gymnocarpon	a-	b24	-	8	.67
F	Unknown forb-perennial	b6	a-	4	-	-
F	Verbascum thapsus	-	-	-	-	.03
F	Zigadenus paniculatus	1	-	1	-	-
Total for Annual Forbs		57	202	24	75	5.76
Total for Perennial Forbs		165	493	74	220	17.77
Total for Forbs		222	695	98	295	23.53

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS --
Herd unit 17 , Study no: 36

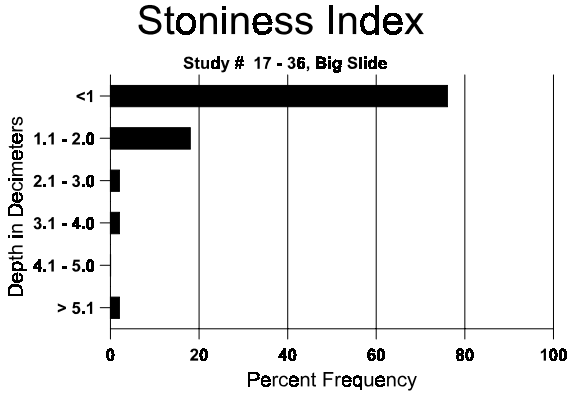
Type	Species	Strip Frequency '97	Average Cover % '97
B	Artemisia tridentata vaseyana	1	-
B	Cercocarpus ledifolius	4	-
B	Gutierrezia sarothrae	2	.15
B	Quercus gambelii	6	4.34
Total for Browse		13	4.49

BASIC COVER --
Herd unit 17 , Study no: 36

Cover Type	Nested Frequency '97	Average Cover % '89	Average Cover % '97
Vegetation	394	22.50	57.95
Rock	283	20.25	15.17
Pavement	204	13.00	3.27
Litter	380	36.25	37.15
Cryptogams	47	0	.49
Bare Ground	142	8.00	2.46

SOIL ANALYSIS DATA --
Herd Unit 17, Study no: 36, Big Slide

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
13.7	55.8 (15.5)	6.7	39.4	32.7	27.8	2.7	11.6	195.2	.5



PELLET GROUP FREQUENCY --
Herd unit 17 , Study no: 36

Type	Quadrat Frequency '97
Elk	5
Deer	4

BROWSE CHARACTERISTICS --
Herd unit 17 , Study no: 36

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia tridentata vaseyana																		
Y	89	1	-	-	-	-	-	-	-	-	1	-	-	-	33			1
	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
M	89	1	1	-	-	-	-	-	-	-	2	-	-	-	66	22	24	2
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
D	89	2	16	-	-	-	-	-	-	-	14	-	-	4	600			18
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
X	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	40			2

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'89	81%	00%	19%	-97%
'97	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)			Dec:	
	'89	699		86%
	'97	20		0%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Cercocarpus ledifolius																		
Y	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	4	-	-	-	-	-	-	-	-	4	-	-	-	80			4
% Plants Showing		'89	Moderate Use 00%	Heavy Use 00%	Poor Vigor 00%										%Change			
		'97	00%	00%	00%													
Total Plants/Acre (excluding Dead & Seedlings)													'89		0	Dec:		-
													'97		80			-
Gutierrezia sarothrae																		
Y	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	4	-	-	-	-	-	-	-	-	4	-	-	-	80			4
M	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	4	-	-	-	-	-	-	-	-	4	-	-	-	80	9	9	4
% Plants Showing		'89	Moderate Use 00%	Heavy Use 00%	Poor Vigor 00%										%Change			
		'97	00%	00%	00%													
Total Plants/Acre (excluding Dead & Seedlings)													'89		0	Dec:		-
													'97		160			-
Quercus gambelii																		
S	89	-	-	-	2	-	-	-	-	-	-	2	-	-	66			2
	97	-	-	-	-	-	-	5	-	-	5	-	-	-	100			5
Y	89	-	1	-	5	1	-	2	-	-	9	-	-	-	300			9
	97	17	-	-	43	-	-	-	-	-	60	-	-	-	1200			60
M	89	2	1	-	-	-	-	-	-	-	1	2	-	-	100	88	112	3
	97	-	-	-	1	-	-	-	-	-	1	-	-	-	20	29	41	1
X	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	400			20
% Plants Showing		'89	Moderate Use 25%	Heavy Use 00%	Poor Vigor 00%										%Change +67%			
		'97	00%	00%	00%													
Total Plants/Acre (excluding Dead & Seedlings)													'89		400	Dec:		-
													'97		1220			-